State of Missouri COVID-19 Response Vaccine Distribution Analysis

June 1, 2021
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This document includes data on COVID-19 vaccinations for the State of Missouri in support of their vaccine ordering and distribution process.

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Executive Summary | Key Insights

12-17 POPULATION
- Missouri’s 12-17 population adds an additional **472k eligible individuals**, an increase of **9.4%** from the 18+ total
- The share of total vaccines going to **12-17 year olds is growing** – climbing from **28.5%** to **34.4%** week over week

STATEWIDE UPTAKE
- There was an **increase in 18+ vaccine initiations** for the first time in 5 calendar weeks
- ~**46.5k** individuals initiated vaccination – **3.5k more** than last week

REGIONAL & COUNTY TRENDS
- Consistent with the previous 2 weeks, **Region C** vaccinated the **largest percent of its population** (1.1%) in comparison to the rest of the regions
- The statewide **vaccine initiation increase** was driven by **urban counties**: St Louis (+1,448), Jackson (+1,265), St. Charles (+887), Jefferson (+748) and Clay (+747) – all of which are within the **top 10 counties by vaccination gap**

CENSUS TRACT ANALYSIS
- Vaccine uptake hotspots are **extending further** into the suburban areas of the **Kansas City** and **St. Louis** metro regions
- Vaccine uptake in the St. Louis metro region continues to change weekly throughout its most vulnerable communities based on the COVID Vulnerability Index

Note: Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.

For internal use only by State of Missouri. Output based on available data.
Expanded Eligibility

12-17-Year-Old Population
An estimated 472K Missourians are aged between 12-17 of which 64K have been vaccinated.

**DISTRIBUTION OF POPULATION BY REGION (%)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>23.3%</td>
</tr>
<tr>
<td>B</td>
<td>2.9%</td>
</tr>
<tr>
<td>C</td>
<td>36.8%</td>
</tr>
<tr>
<td>D</td>
<td>14.9%</td>
</tr>
<tr>
<td>E</td>
<td>5.4%</td>
</tr>
<tr>
<td>F</td>
<td>7.8%</td>
</tr>
<tr>
<td>G</td>
<td>2.3%</td>
</tr>
<tr>
<td>H</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Darker blue shades indicate larger share of 12-17 population across the State.

**472K**

Estimated Total 12-17 Population

**9.4%**

Estimated Increase in Eligible Population

**Top 5 Counties: # Population Added**
1. St. Louis: 77k
2. Jackson: 54k
3. St. Charles: 33k
4. Greene: 20k
5. Jefferson: 18k

**Top 5 Counties: % Increase in Population**
1. Bollinger: 18%
2. Carter: 18%
3. Douglas: 16%
4. Oregon: 15%
5. Schuyler: 14%

**Note:** Methodology, data sources, and limitations are available in the Appendix.
12-17 Year-olds | Vaccination Progress

Darker shades on the map on the left indicate counties with larger vaccination gaps and higher percentages of unvaccinated on the right (for the 12-17 population)

**VACCINATION GAP (#)**

- Region C has the largest 12-17 population (139,985) remaining eligible for vaccination, while St. Louis and Jackson counties represent the only counties with more than 45k eligible for vaccination.

  Similar to 18+ trends, rural counties are experiencing a lower vaccine uptake thus far.

**PERCENT UNVACCINATED (%)**

- Note: Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Null counties were filtered out. All vaccinations tagged to the <18 age group were assumed to be between ages 12-17. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
The graph below depicts the total vaccinations administered over the past 5 weeks, comparing the share of vaccinations that have gone to the under 18 population versus the over 18 population.

**Share of Vaccinations Comparison Between 12-17 and Adult (18+) Population**

<table>
<thead>
<tr>
<th>Calendar Week (SMV)</th>
<th>Total Vaccinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>'17-2021</td>
<td>94.1%</td>
</tr>
<tr>
<td>'18-2021</td>
<td>93.9%</td>
</tr>
<tr>
<td>'19-2021</td>
<td>94.7%</td>
</tr>
<tr>
<td>'20-2021</td>
<td>71.5%</td>
</tr>
<tr>
<td>'21-2021</td>
<td>65.6%</td>
</tr>
</tbody>
</table>

**Key Observations**

1. A considerable jump in share of weekly vaccinations for the 12-17 age group occurred in SMV Calendar Week 20 – rising from ~5% to ~29%

2. The 12-17 share increased again in Week 21 along with the jump in total vaccinations (inclusive of 18+) – reaching just over 1/3 of total vaccines administered.

3. The average share of 12-17 vaccinations prior to Week 20 was 1.5%

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Null counties were filtered out. All vaccinations tagged to the “<18” age group were assumed to be between ages 12-17. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Statewide Analysis

Region & County-Level
<table>
<thead>
<tr>
<th>REGION</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>VACCINATION GAP (#)</td>
<td>670K</td>
<td>96K</td>
<td>1,091K</td>
<td>461K</td>
<td>158K</td>
<td>201K</td>
<td>68K</td>
<td>124K</td>
<td>93K</td>
<td>2,963K</td>
</tr>
<tr>
<td>% UNVACCINATED WITHIN REGION</td>
<td>58.63%</td>
<td>66.03%</td>
<td>55.46%</td>
<td>64.11%</td>
<td>64.38%</td>
<td>52.12%</td>
<td>71.12%</td>
<td>68.11%</td>
<td>70.49%</td>
<td>59.06%</td>
</tr>
<tr>
<td>SHARE OF ELIGIBLE STATEWIDE POPULATION</td>
<td>22.8%</td>
<td>2.9%</td>
<td>38.2%</td>
<td>14.3%</td>
<td>4.9%</td>
<td>7.7%</td>
<td>1.9%</td>
<td>3.6%</td>
<td>2.6%</td>
<td>100%</td>
</tr>
<tr>
<td>SHARE OF STATEWIDE VACCINATIONS</td>
<td>23.0%</td>
<td>2.4%</td>
<td>42.7%</td>
<td>12.6%</td>
<td>4.3%</td>
<td>9.0%</td>
<td>1.3%</td>
<td>2.8%</td>
<td>1.9%</td>
<td>100%</td>
</tr>
<tr>
<td>SHARE OF STATEWIDE REMAINING UNVACCINATED</td>
<td>22.6%</td>
<td>3.2%</td>
<td>36.8%</td>
<td>15.6%</td>
<td>5.3%</td>
<td>6.8%</td>
<td>2.3%</td>
<td>4.2%</td>
<td>3.2%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/21. Methodology, data sources, and limitations are available in the Appendix. Cells outlined in green indicate a greater than 1 percentage point discrepancy between share of eligible statewide population and share of statewide vaccinations.
18+ Regional Vaccination Rates Over Time

This visualization displays the weekly change in percent vaccinated in each region over the last 10 weeks for the over 18 population.

18+ Additional Percent of Population Vaccinated by Region (SMV Week 12 to Week 21)

Note: All weeks are calendar weeks, defined by ShowMeVax (SMV), where Week 20 is 5/9 – 5/15. Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Methodology, data sources, and limitations are available in the Appendix. Negative vaccination changes were set to zero due to identified data quality issue that is being investigated.

KEY OBSERVATIONS

- There was an increase in 18+ vaccine initiations for the first time since calendar week 15 (~34k to ~43k)
  - 8 of the 9 regions increased vaccine initiation when compared to Week 20 (Region G experienced a slight decrease)
  - 83 of the 115 (72%) counties increased vaccine initiation
- Doses increased for both the under 18 population and over 18 population
- The weekly initiation increase was driven by the urban areas: St Louis (+1,448), Jackson (+1,265), St. Charles (+887), Jefferson (+748) and Clay (+747)
18+ Priority Counties by Vaccination Gap & Percent Unvaccinated

Missouri counties were ranked by vaccination gap (how many residents are unvaccinated and estimated to be eligible) and percent unvaccinated (estimate of eligible residents that have not been vaccinated) for the over 18 population

**TOP 5 COUNTIES BY VACCINATION GAP (#)**

1. **St. Louis**: 445,700 ▼ -10k
2. **Jackson**: 328,200 ▼ -6.2k
3. **St. Charles**: 176,700 ▼ -4.1k
4. **St. Louis City**: 159,000 ▼ -3.0k
5. **Jefferson**: 132,000 ▼ -2.4k

**TOP 5 COUNTIES BY UNVACCINATED (%)**

1. **Pulaski***: 80.5% ▲ -0.8%
2. **Newton**: 80.2% ▲ -0.4%
3. **McDonald**: 79.6% ▲ -0.7%
4. **Reynolds**: 77.6% ▲ -0.4%
5. **Howell**: 76.2% ▲ -0.5%

*Pulaski has the highest percent unvaccinated, likely due to the large military presence and missing federal vaccination data

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/21. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file. Magnitude of change is a numerical difference between the 2 weeks for vaccination gap and a percentage point difference for percent unvaccinated. Blue indicates a county new to the list in comparison to last week. ▲ indicates no change in rank since last week. ▲ ▼ indicates increase and decrease in rank since last week, respectively.
Statewide Analysis

Census Tract Level
Darker shades on the map on the left indicate Census Tracts with larger vaccination gaps and higher percentages of unvaccinated on the right (for the 18+ population).

Areas with the largest vaccination gaps continue to align with the urban areas of highest population across Missouri. Census Tracts with the highest percentages of unvaccinated populations are concentrated in more rural areas in Regions B, D, I, and G. Regions A, C, E, and F have the greatest number of Census Tracts within the lowest quintile for the percent unvaccinated.

**VACCINATION GAP (#)**

**PERCENT UNVACCINATED (%)**

**Unvaccinated Quintiles (%)**
- 0.8% - 46.7%
- 46.8% - 56.6%
- 56.6% - 62.7%
- 62.7% - 68.9%
- 68.8% - 94.4%

**Vaccination Gap Quintiles (#)**
- 0 - 1,185
- 1,186 - 1,677
- 1,678 - 2,233
- 2,234 - 2,963
- 2,965 - 7,331

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Vaccination uptake hotspots are displayed in red for Week 21, indicating Census Tracts where vaccinations have been administered at rates significantly higher than State averages.

**Vaccine uptake hotspots now have **limited occurrence** in the urban cores of Kansas City and St Louis**

Vaccine uptake hotspots are extending out further into the suburbs.

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/2021. Methodology, data sources, and limitations are available in the Appendix.
Vaccine Uptake Desert Analysis | Week 21

Vaccination uptake deserts are displayed in blue for Week 21, indicating Census Tracts where vaccination uptake is significantly lower than State averages.

**Vaccine Uptake Desert at the Census Tract Level**

The Kansas City region continued to show **limited vaccination uptake** in areas of high COVID-19 vulnerability during Week 21, while the St. Louis region experienced **varying uptake** within its more vulnerable communities.

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/25/21. Methodology, data sources, and limitations are available in the Appendix.
Appendix
Statewide Geospatial Visualization of COVID-19 Vulnerable Populations

Highlighted in darker red are areas of vulnerability according to our COVID-19 Vulnerability Index.

FACTORS CONTRIBUTING TO VULNERABILITY

- COVID-19 Case Burden
- Living below 138% of the Federal Poverty Level
- 1 or more medical comorbidity
- Minority populations
- Percent Unvaccinated

KEY OBSERVATIONS

- The most vulnerable regions within the State of Missouri remain in the urban cores of Kansas City and St. Louis.
- The Bootheel has emerged as the third most vulnerable region in the State.

Note: Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/13/2021. More information on methodology can be found in the Appendix.
Statewide Top 10 Census Tracts by the COVID-19 Vulnerability Index

Below are the top 10 Census Tracts across Missouri with the highest COVID-19 Vulnerability Index scores – notably all in St. Louis and Kansas City.

<table>
<thead>
<tr>
<th>Vulnerability Index Rank</th>
<th>Census Tract</th>
<th>County</th>
<th>18+ Population</th>
<th>Unvaccinated as of 5/13/21 (%)</th>
<th>Cumulative COVID-19 Case Burden as of 5/13/21 (# per 100k)</th>
<th>1+ Medical Comorbidities (%)</th>
<th>Minority Populations (%)</th>
<th>Living Below 138% FPL (%)</th>
<th>Households without Internet Access (%)</th>
<th>Crowded Households (%)</th>
<th>Individuals with Education Level Below High School (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29510106200</td>
<td>St. Louis City</td>
<td>980</td>
<td>77.35%</td>
<td>7,005</td>
<td>38.98%</td>
<td>97.96%</td>
<td>70.32%</td>
<td>42.92%</td>
<td>11.68%</td>
<td>16.46%</td>
</tr>
<tr>
<td>2</td>
<td>29189212002</td>
<td>St. Louis County</td>
<td>2,196</td>
<td>72.91%</td>
<td>15,792</td>
<td>39.71%</td>
<td>94.85%</td>
<td>54.19%</td>
<td>19.13%</td>
<td>9.19%</td>
<td>12.27%</td>
</tr>
<tr>
<td>3</td>
<td>29095013203</td>
<td>Jackson County</td>
<td>2,837</td>
<td>76.49%</td>
<td>9,306</td>
<td>42.30%</td>
<td>92.14%</td>
<td>55.73%</td>
<td>18.69%</td>
<td>10.85%</td>
<td>12.74%</td>
</tr>
<tr>
<td>4</td>
<td>29189212200</td>
<td>St. Louis County</td>
<td>5,797</td>
<td>73.56%</td>
<td>5,111</td>
<td>62.69%</td>
<td>96.89%</td>
<td>38.00%</td>
<td>34.81%</td>
<td>11.04%</td>
<td>14.46%</td>
</tr>
<tr>
<td>5</td>
<td>29189213900</td>
<td>St. Louis County</td>
<td>1,389</td>
<td>78.33%</td>
<td>7,127</td>
<td>34.05%</td>
<td>96.90%</td>
<td>58.13%</td>
<td>46.02%</td>
<td>6.55%</td>
<td>10.30%</td>
</tr>
<tr>
<td>6</td>
<td>29095005602</td>
<td>Jackson County</td>
<td>1,321</td>
<td>73.28%</td>
<td>7,935</td>
<td>49.36%</td>
<td>96.37%</td>
<td>47.05%</td>
<td>14.45%</td>
<td>3.64%</td>
<td>15.84%</td>
</tr>
<tr>
<td>7</td>
<td>29189212102</td>
<td>St. Louis County</td>
<td>2,286</td>
<td>79.27%</td>
<td>5,000</td>
<td>42.26%</td>
<td>96.59%</td>
<td>47.16%</td>
<td>15.91%</td>
<td>14.01%</td>
<td>13.99%</td>
</tr>
<tr>
<td>8</td>
<td>29189213800</td>
<td>St. Louis County</td>
<td>4,763</td>
<td>73.69%</td>
<td>7,121</td>
<td>58.56%</td>
<td>96.66%</td>
<td>33.78%</td>
<td>26.39%</td>
<td>11.36%</td>
<td>14.63%</td>
</tr>
<tr>
<td>9</td>
<td>29510125700</td>
<td>St. Louis City</td>
<td>1,929</td>
<td>71.38%</td>
<td>3,134</td>
<td>20.79%</td>
<td>94.76%</td>
<td>74.23%</td>
<td>36.30%</td>
<td>3.14%</td>
<td>20.53%</td>
</tr>
<tr>
<td>10</td>
<td>29189213600</td>
<td>St. Louis County</td>
<td>2,877</td>
<td>70.56%</td>
<td>6,702</td>
<td>50.78%</td>
<td>93.33%</td>
<td>44.35%</td>
<td>34.82%</td>
<td>13.18%</td>
<td>17.90%</td>
</tr>
</tbody>
</table>

Statewide Census Tract Average: 58.42% 8,261 29.85% 20.43% 21.64% 17.42% 5.17% 9.98%

Note: Statewide average is taken across all census tracts in Missouri. Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 05/13/2021. More information on methodology can be found in the Appendix.
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